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TORREYA

September, 1903

LIRIODENDRON NOTES

BY EDWARD W. BERRY

FOSSIL STIPULES. — In the Botanical Gazette, **34** : 57. 1902, I made the statement that fossil stipules of *Liriodendron* had not been found unless certain remains referred by Newberry, Lesqueux, and Hollick to *Paliurus* were to be so interpreted. I am now convinced that these remains are not those of stipules, although Hollick's *pl. 2. f. 12, 18, 19*. 1892, * are very similar superficially. I find I overlooked certain specimens figured and described by Heer as stipules in connection with *Liriodendron Meekii* from Greenland. † His figures are here reproduced (fig. 4) with the comment that they almost certainly represent mid-Cretaceous (Atane) *Liriodendron* stipules.

SEED DISPERSAL. — *Liriodendron* seeds are not eaten by mammals or birds, nor have they any means of attaching themselves to the hair of mammals or feathers of birds ; they are too large to be carried in mud-balls or mud-cakes, and their wings at best enable them to navigate just beyond the parent tree, so that the spread of the species has necessarily been comparatively slow. Their only means of crossing intervening water would be by floating in currents either attached to detached branches or more probably as individuals. The trees do not inhabit seashores but are common enough along river banks so that a river journey would have to precede an ocean voyage. The carpels remain on the trees until thoroughly dry, usually through the greater part of the winter, falling a few at a time as the winds dislodge them.

* Trans. N. Y. Acad. Sci. **12**.† Heer, Fl. Foss. Arct. **6**² : 90. *pl. 23. f. 8*. 1882.

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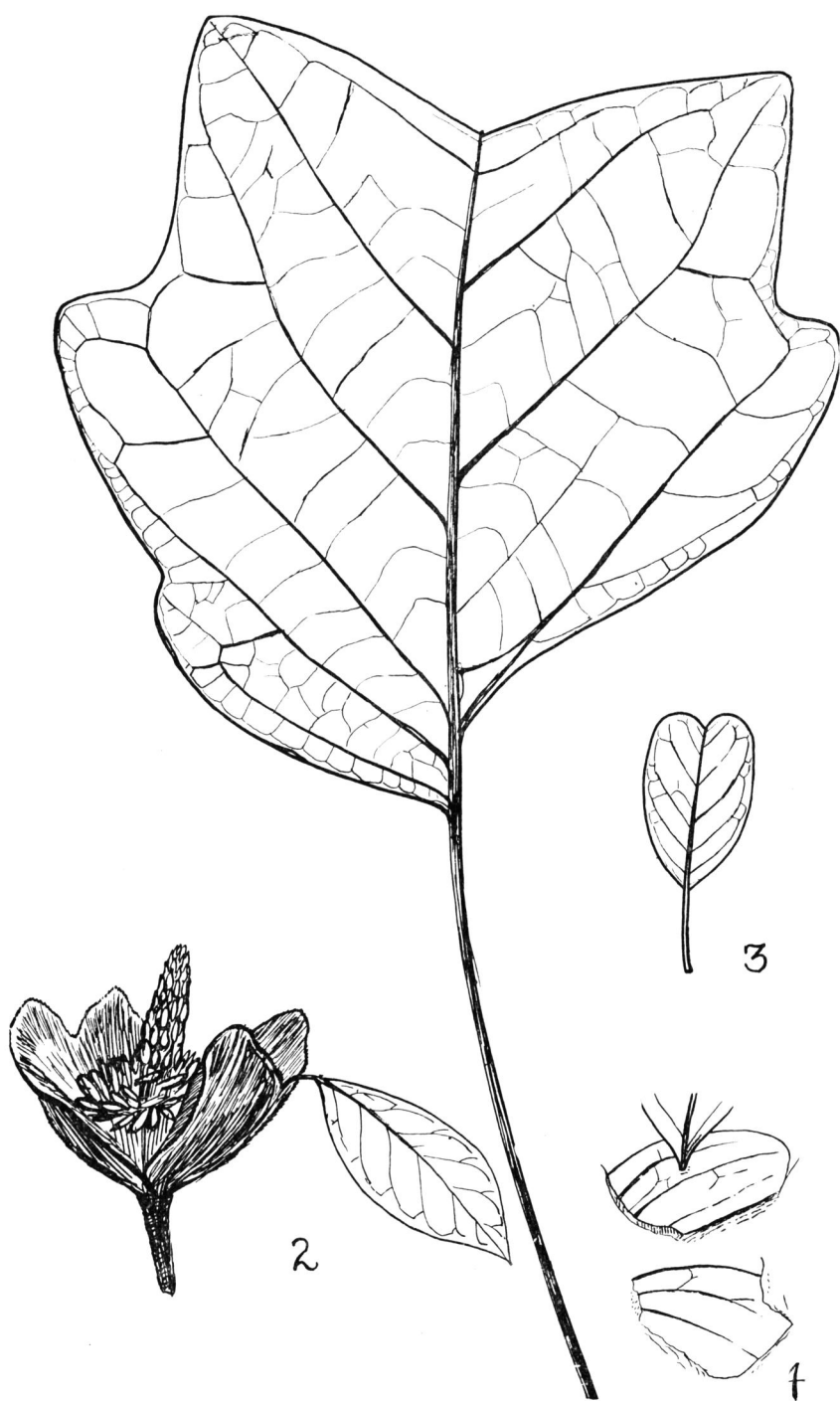
They float for a long period. Of five carpels put to soak on March 24, 1902, one sank on June 6, and the others were still floating on February 27, 1903, when the experiment was discontinued, a total period of 340 days. In an ocean current traveling but one half mile an hour they would be carried over 4,000 miles in 340 days. At the rate of flow of the Gulf Stream off Newfoundland (about one and two fifths miles per hour) they would be carried 10,744 miles, so that even if there was no land bridge to Europe by way of Greenland and Iceland the spread of the ancient species would not seem remarkably difficult.

A REVERTED LEAF-FORM. — Fig. 1 represents a leaf of *Liriodendron Tulipifera* L. from a grown tree at Passaic, N. J., showing the basal lobing which represents the first stage in the formation of stipules. It is very similar to the leaf figured in the Bull. Torrey Club, 28: pl. 41. f. 1. 1901, in both form and venation, representing however a stage not quite so far advanced as the latter.

ANOMALOUS LEAF OF MAGNOLIA (fig. 3).—The close relation of the genera *Magnolia* and *Liriodendron* is further emphasized by the retuse leaf of *Magnolia Virginiana* L. here figured. The similarity of the modern bud-leaves and stipules has been pointed out by Meehan and the writer.* The contemporaneous appearance of *Magnolia* and *Liriodendron* in the Raritan formation of New Jersey, their parallel development in geological time, and their similar geographical distribution at the present day, as well as their dispersal in ancient times all point to a common ancestor. This leaf, occurring next to the blossom (localized stage of Professor Jackson) also serves to corroborate the theory of the development of the *Liriodendron* leaf from a lanceolate-leaved ancestor.

With the exception of being smaller, our leaf is the counterpart of the *Liriodendron* leaf figured in Bull. Torrey Club, 28: pl. 41. f. 6. The *Liriodendron* leaves figured in Torrey, 2: pl. 1. f. 1, 3. 1902, are about the same size and are exactly similar in outline except for being slightly more retuse. Among fossil leaves it greatly resembles various arctic leaves referred by Heer to *Colutea* and to *Liriodendron Meekii*, and except for being only half as large it is a counterpart of the leaf of *Liriodendron*

* Compare fig. 2 of *Michelia fuscata* (Andr.) Hance with Bull. Torrey Club, 28: pl. 42. f. 10. 11. 1901; and Torrey, 1: pl. 1, 2. 1901.



primaevum which Newberry originally described as *Leguminosites Marcouanus*.

EXPLANATION OF FIGURES

Fig. 1, basilar-lobed leaf of *Liriodendron Tulipifera* L. ; Fig. 2, flower and leaf of *Michelia fuscata* (Andr.) Hance (from Prantl, after Baillon) ; Fig. 3, anomalous leaf of *Magnolia Virginiana* L. ; Fig. 4, fossil *Liriodendron* stipules (after Heer).

PASSAIC, N. J.,
August 5, 1903.

THE DISTRIBUTION OF *FUCUS SERRATUS* IN AMERICA

BY C. B. ROBINSON

The serrated rockweed, *Fucus serratus* L., has long been known to occur in abundance at Pictou, Nova Scotia, where it was first collected by Professor Fowler. Outside of this general locality it has never been found growing in America (if we except a very doubtful report from Newburyport, Mass.), and until lately its distribution was thought to be local, only two additional stations being recorded, Pirate Harbor, on the Strait of Canso, by Professor Macoun, and Pictou Island by Dr. A. H. Mackay.

Specimens brought from Broad Cove, Inverness, last summer, by Miss E. J. Fraser, extended the range some sixty miles to the northeast of the Strait, along the western side of Cape Breton, while others gathered at Pugwash early this spring by R. M. Benvie, removed the other boundary a like distance to the west of Pictou along the southern shores of Northumberland Strait.

These finds caused a systematic search to be undertaken along the entire coast of the Maritime Provinces, almost every important point upon the Gulf being explored, and in several cases the shores followed on foot for considerable distances. Much additional information has been obtained, which may be summarized as follows :

Although this rockweed is very common in all parts of Pugwash Harbor, no one has yet been able to find it farther west,